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Christmas.

ALL through western Europe, even before it had been Christianized, the winter solstice was regarded as the beginning of renewed life in nature, and was celebrated with joyful observances, and the origin of almost all the secular features of our modern Christmas festival may be traced to one ancient people or another. From the Romans, for instance, we get our practice of making Christmas gifts, such gifts being a feature of their Saturnalia, celebrated at the winter solstice. As conspicuous as the Saturnalia in Rome were the Yule-tide festivities of the ancient Teutons. Between the 25th of December and the 6th of January, they believed, their great gods walked the earth, and their footsteps might be traced by those wise enough to see. The memory of these dates still survives in England, even though the time has passed when the "Lord of Misrule" reigned from All-Hallow Eve till Candlemas, and the land gave itself up to the eager pursuit of jollity. Many plants are mentioned by old writers as figuring in these Christmas celebrations. Chief of all was the Mistletoe, excluded from the church edifice, as its Druidic significance was too clearly remembered, but used profusely elsewhere, and the great joy of mischievous youths when pretty maidens were about.* Almost as high in favor stood the Holly, which to the ancient Germans had been "a sign of the life which preserved nature through the desolation of winter, and was gathered into pagan temples to comfort the sylvan spirits during the general death." Holly was used as a dream-plant on Christmas Eve as well as at certain other anniversaries. The same idea which consecrated the Holly as an emblem of persistent life sanctified other evergreens too, and from time immemorial many sorts were used for the Christmas decoration of church and home.

* In Irving's "Christmas Day" he speaks of "the parson rebuking the sexton for having used Mistletoe among the greens with which the church was decorated. It was, he observed, an unholy plant, profaned by having been used by the Druids in their mystic ceremonies; and though it might be innocently employed in the festive ornamenting of halls and kitchens, yet it had been deemed by the Fathers of the Church as unhallowed, and totally unfit for sacred purposes. So tenacious was he on this point, that the poor sexton was obliged to strip down a great part of the humble trophies of his taste before the parson would consent to enter upon the service of the day."

But the great feature of the old-English Christmas was the Yule-log, often called the "Yule-clog," and described as a block rather than a log. This, too, was an inheritance from paganism, having been considered to sanctify the roof-tree and protect it against evil spirits. It was a sign of ill-luck if the "clog" went out during the festivities; and a brand from it was always preserved to light its successor at the next year's celebration. Tall "Christmas candles," wreathed in evergreens, were another feature of the English Christmas.

It seems a singular fact that amid the variety of entertainments provided and rites observed in England, the Christmas-tree should not have figured, for it is the heart and soul of Christmas in modern Germany and is a legacy of ancient Teutonic paganism. However, the main idea which inspired most of these rites seems to have been the use of evergreen plants and of lights in some shape as symbols of the renewal of life; and while the English Teuton retained the Yule-log, the tall, green-wreathed candle, and the evergreen decoration of the wall, his continental cousin clung to the evergreen tree with its myriad sparks of light. In "Round About our Coal Fire," an amusing little book on Christmas customs published in 1740, no mention is made of the Christmas-tree, although in the middle of the eighteenth century many German customs had been imported into England through the advent of her Hanoverian rulers. And even to-day, although occasionally seen in England, it cannot be called at home there.

In all parts of Germany, on the other hand, Christmas would not be Christmas without the tree—one could as soon fancy our Independence Day without powder and noise. The festival is strictly a family one, and Christmas Eve, not Christmas Day, is its culminating point. Where the modern Englishman thinks of his Christmas dinner, the modern German thinks of his tree instead. He likes it as tall as his ceiling will permit when it is placed on a table. He does not hang gifts upon it—nothing but lights and pretty ornaments and a little figure of the Christ-child at the top; but the gifts should lie beneath its sanctifying shade, so he rarely sets it on the floor. But if he cannot have it large and stately he must have what he can, no matter how poor he be—at least a tiny shrub lit with two or three cheap candles. Cheaper even than this is the artificial tree which can be preserved from year to year, made of a central stick with radiating wires, all covered with fluffy green paper, the candles being stuck on the upturned ends of the wire. As an example of the affection in which the Christmas-tree is held by all Germans, high and low, young and old, we may recall that when in 1870 King William and his army were beleaguering Paris, a vast evergreen was set up in the great salon of the palace at Versailles. The gifts which had come from home for the officers invited to make merry with their king were kept until it had been lighted, and the military decorations they had deserved were taken from its branches to be pinned on their breasts.

When Washington Irving describes an English Christmas he mentions no Christmas-trees; but he does not comment upon their absence, as an American would to-day. Popular as they now are, it is only of late years that Americans have known them. Indeed, the first Americans, at least in the northern states, gave up the observance of Christmas as a rite savoring too much of that ecclesiastical tyranny which they had crossed the ocean to escape. William Bradford wrote of the first Christmas the Plymouth Pilgrims spent in the New World "Ye 25th day began to erect ye first house for comone use to receive them and their goods." And of the succeeding year he wrote "One ye day called Christmas-day, ye Gov'r caled them out to worke (as was used.)" Thanksgiving Day took the place in New England which Christmas had held in Old England; and in the Dutch settlement at New York, New Year's Day was the chief festival of the year. But gradually the claim of the great December festival reasserted itself, until it has been

recognized by all denominations. The English Christmas dinner, the Roman custom of gifts and the German Christmas-tree have become familiar facts in every part of our land. We, too, decorate church and home with evergreens. Our chief dependence, next to the boughs of Spruce, of Fir and of our beautiful indigenous Hemlock, are plants which seem to have been made for the purpose and which Europe does not know—the so-called Ground Pine and other Club Mosses, which are easily woven into garlands. Our Holly is not so handsome as the English, but it is rapidly growing in favor, and of recent years Mistletoe has been brought from New Jersey and the south to our northern towns. The scarlet fruit of the Black Alder, Mosses of several kinds and colors, the evergreen foliage of the Kalmia and the Rhododendron, the bluish gray berries of the Juniper, dried grasses, and the handsome, parti-colored fruit of the Bittersweet—all these are now lavishly used at Christmas, although it is not half a century since the first "Christmas green" was sold in New York.

From the vast numbers of Germans who within this period have landed on our shores we have learned to know and love the Christmas-tree. Middle-aged Americans can remember a time when they had never seen one, and the trade in them began in New York in 1851, when two sled loads of young Balsams were brought from the Catskills and sold at the corner of Vesey and Greenwich Streets. At least 150,000 trees have been sold in this city this year, about half of them coming from Maine, and the rest from the Berkshire Hills, the Adirondacks and the Catskills. The Balsam Fir is the favorite, and the Black Spruce is next in demand. The great west naturally gets its supply at home, and there the Blue Spruce is the chief dependence, the trees being sold at wholesale at prices which vary from $10 a hundred for specimens from four to six feet in height to $60 a hundred for those which reach twelve to fourteen feet. Sold at retail in the large towns such sums are more than quadrupled, and particularly fine specimens, perfectly symmetrical, tapered to a single leader, full in foliage, and fresh in color, may bring any price within the means of the buyer.

The Petit Trianon at Versailles.

THE palace called the Petit Trianon in the park at Versailles was built for Louis XV. in 1766 (nearly a century later than the Grand Trianon which Louis XIV. built for Madame de Montespan), but is most intimately connected with the memory of Marie Antoinette, who created its famous "English garden" and Swiss châlets. These lie on one side of the building, while its main façade, shown in our picture on p. 619, has always looked out on a "French garden" connected with the grounds of the Grand Trianon. Although the details of this garden have been altered in recent times, it expresses as clearly as in its first estate typical French ideas with regard to the arrangement of grounds in the vicinity of a stately building.

There are avenues of clipped trees, straight paths and long rectangular flower-beds to harmonize with the lines of the architectural mass, to lead the eye directly toward it, and to show it, above the wide central lawn, as though set in a dignified and appropriate frame, while the curve of the great basin agreeably relieves the prevalence of right angles. It is evident that such an arrangement is far better in keeping with a building of this character than a "natural" landscape design would be. But it may be pointed out that its whole effect would be ruined had flower-beds or "ornamental" plants been allowed to intrude on the lawn. It is the simplicity of this that throws the bright-colored beds and the masses of foliage, as well as the building itself, into effective relief, and that gives breadth, repose and unity to the scene as a whole.

The Great Sequoia.

THE first white man who set eyes on the *Sequoia gigantea* was probably General John Bidwell, now one of the best known of the California pioneers. He has told me in a very simple and careful way the incident in his journey across the continent in 1841. He was a mere boy in years then, but a man in experience. The adventures of the party would fill a volume. All that concerns the Sequoias is to this effect. The explorers were on the summit of the Sierras, worn out and anxious to descend into the valley. They were in an Indian country; the game was very scarce, and Bidwell went ahead to hunt and explore the region. Late in the afternoon, while in the midst of the deep cañons of Calaveras, and hastening to reach the river gorge to rejoin his companions, young Bidwell passed through the Calaveras grove of Sequoias. He was in such haste that he only noticed the immense size of the trees as he stood a moment beside one of the fallen giants. He said nothing of his discovery; but afterward, when in the employ of General Sutter at New Helvetia, he planned an exploring party to find the great trees he had seen at dusk that afternoon in 1841. Other business delayed the expedition. Then came the war, the conquest of California and the discovery of gold. Bidwell went first to the mines, and then was busy in securing his great Rancho Chico, and had no time to look for his big trees.

At last, in the spring of 1852, A. T. Dowd, a hunter of Murphy's Camp, Calaveras, while following a wounded grizzly, passed through the forests of *Pinus Lambertiana* and *Pinus ponderosa*, and came upon the Giant Sequoia-grove, since so famous. He was laughed at when he told his story; but the next Sunday he rushed wildly down the hill and called to "the boys" that he had "shot an enormous grizzly." They went with him to the base of the largest tree in the grove: "There, boys," he said, "is my grizzly!" When General Bidwell heard the story of the discovery he said at once: "Those are my big trees; I am very glad they have been found."

The California Academy of Sciences received specimens of foliage, bark and cones of the Sequoia from the Calaveras grove before June, 1852. The late Dr. Kellogg forwarded specimens to Professor Asa Gray and to Dr. John Torrey, who at once recognized a second species of Sequoia. Veitch had some time before sent William Lobb, as a collector of plants, to the Pacific Coast. He was then at Monterey, I think, with Dr. C. C. Parry. Dr. Kellogg told him about the Sequoias, and he procured specimens for Dr. Lindley, who, failing to understand its true relationship, described the tree in the *Gardeners' Chronicle* of December 24th, 1853, as Wellingtonia—the name by which it is still almost universally known in English gardens.

When I was in Fresno, two years ago, I was told by the proprietor of the leading newspaper of the county that he had just returned from the Redwood-forests in the Sierras, and that there were thousands of acres of timber waiting to be taken up. "It is better timber than the Redwood of the Coast Range," he said, "and constitutes one of the great resources of Fresno and Tulare Counties. There are several mills at work in the forests, and we shall have a narrow gauge railroad there in a few years." I looked further into the matter, and discovered that the Redwood referred to was the largest and finest forest of *Sequoia gigantea* in California, and that it was rapidly passing into private ownership and was being cut into lumber and split into fence posts. During the past two years the destruction of these forests has gone on with accelerated speed, owing to the rapid settlement of the foot-hills by farmers, who are far removed from the railroad, and find it cheaper to get *Sequoia gigantea* Redwood from the mountains than *Sequoia sempervirens* Redwood from the coast.

There are ten groups of *Sequoia gigantea* in the Sierra Nevada Mountains, and the descriptions of most of them are found in the writings of Muir, Whitney and Clarence King. Beginning at the north, these groups are named as follows: The Calaveras grove, the South Calaveras grove, the Tuolume grove, the Merced grove, the Mariposa grove, the Fresno grove, the Dinky grove, the King's River grove, the new King's River grove and the large Kaweah groves. The latter consists of a number of small Sequoia-forests extending over a belt of country five miles wide and fifty miles long. It is in this region that the Kaweah colony of Socialists have secured most of the timber lands,

and are now building large mills. It is not probable that in ten years any of these ten forest groups will remain except the Calaveras groves, and perhaps one or two other small groups, now used as summer resorts, unless immediate steps are taken to prevent the further filings of timber claims. The records at the Land Office show that in the past twenty-two months 131,680 acres of heavily timbered land have been bought from the Government, much of it obtained by a systematic evasion of the laws. Four-fifths of this land has been taken up along the western slope of the Sierra Nevada, and includes most of the *Sequoia gigantea* districts.

The Calaveras grove covers fifty acres, and contains ninety-three large trees. One tree in 1854 was stripped of its bark to a height of 116 feet, by a man who thought he could make a fortune exhibiting it. The speculation, fortunately, failed, or the grove would have been ruined by similar enterprises. This tree is estimated to contain 537,000 feet of marketable lumber, and stands 325 feet in height, girthing eighty-four feet without the bark. A fallen tree was about 400 feet in height, and the circumference of the trunk near the base is 110 feet. The south grove contains 380 Sequoias of good size—some very large. One of the largest of the standing trees in the Calaveras groves is the "Grizzly Giant," thirty-three feet in diameter near the ground. There is a tree in the Kaweah region that is thirty-six feet in diameter, and there may be even larger ones.

The Giant Sequoia yields seeds in such abundance (Mr. Bradley counting 324 seeds in a small cone) and the vitality of fresh seed is so uniform that millions of trees could be grown and planted on the mountain slopes of California. In the Sacramento, San Joaquin, Sonoma, Santa Clara and other large valleys the tree thrives without especial care. In most places it has grown faster than the *S. sempervirens*. If the state were to undertake to reforest the waste lands, the Giant Sequoia would offer one of the best trees for that purpose. The reason why it now grows only in such isolated and small groups, instead of in extensive forests, is because its small, light seeds cannot easily root themselves on the dry, leaf-covered soil of the region. The climate has changed; the tree is slowly disappearing. Wherever mountain fires, or cloud-bursts, have swept away the thick layer of coniferous leaves and scales from the ground, young Sequoias have sprung up. This tree, like the Monterey Cypress, has every element of vitality but one—its light, thin seeds are not adapted to survive under the present climatic conditions. The successful type of tree-seed is that of the *Pinus Sabiniana*, which holds its own so well on the hot foot-hills of California. The Great Sequoia lacks the capacity of *S. sempervirens* to reproduce itself from suckers from the roots, and if it is ever to become an important factor in the timber supply of California, its seeds must be planted under favoring conditions. None of the Pacific Coast conifers are more easily grown when the seeds are sown in moist soil.

Another illustration of the dangers to which some tree-seeds are subjected may be found in the case of *Eucalyptus globulus*. Groves of this tree were planted on the dry California hill-sides twenty years ago. They now perfect millions of seeds, but the seeds never grow; they never reach the surface of the dry, leaf-covered soil, or insects carry them off. But many pounds of this seed are gathered by the nurserymen, and sown with better results than with imported seeds. In the moist valleys the Eucalyptus grows from self-sown seeds, but never on the hill-sides. Yet, seedlings three months old are fit to plant anywhere. Without replanting, the Eucalyptus forests of California will mostly disappear in the course of time, just as the Sequoias are disappearing.

The guide books to the Calaveras and other groves still place the age of the Sequoia trees at between three and four thousand years. Professor Whitney's count, it may be remembered, gave a result of 1,255 years. Mr. Bradley made a careful study of the same tree, counting the two ends of the lowest section of the trunk, eighteen feet apart. His results were 1,240 and 1,226. This is a mature tree, fifteen feet in diameter. A large specimen of *Sequoia sempervirens*, 1,200 years old, measured eleven feet in diameter.

Mr. Bradley takes the Pavilion Tree, which Whitney first measured, divides the cross-section into annular zones of one hundred rings, and computes the area of each zone. In this way he arrives at the wood growth for each century. He assumes that 300 years brought the tree to its full height. His ratio of volumes of growth for twelve centuries, the maximum being 1,000, then becomes as follows: 77, 308, 557, 963, 1,000, 794, 841, 908, 828, 817, 907 and 958. The fourth and fifth centuries may be supposed to mark the period of expansion of the head, after the tree had reached light and air above the surrounding forests.

San Francisco. *Charles Howard Shinn.*

Notes upon Some North American Trees.—XV.

I. MAGNOLIA GRANDIFLORA.—Linnæus, in the first edition of his "Species Plantarum," grouped provisionally all the species of Magnolia known to him under one comprehensive name, *Magnolia Virginiana*, distinguishing the different forms under varietal names. That he was not sure that these trees all belonged to the same species, and that his name was a provisional one only, is made clear by his remark that "only eye-witnesses of these trees in their native country can determine whether these (α, β, γ, δ, ε) are distinct."* Now what becomes of the name *M. Virginiana*, the oldest Linnæan name for any of our Magnolias? If these varieties had turned out after further investigation to be merely forms of one polymorphous species, then the Linnæan collective name would have held of course; but being provisional only, it was to be dropped if the provisional species had to be broken up. That this was Linnæus' intention seems clearly enough shown by the fact that having discovered before the publication of the second edition of the "Species" that his varieties were really distinct species, he gave them specific names, using, in every case but one, the varietal names of the first edition.

The exception was the variety *β. fœtida*, which, in the second edition, became *Magnolia grandiflora*. There was confusion, evidently, with regard to this tree at the time of the publication of the "Species," for Linnæus quotes under his variety *β. fœtida* after Ehret's figure of *M. grandiflora* in Catesby's "Natural History of Carolina," t. 61, Clayton's description of the Umbrella-tree, "Magnolia flore maximo albo fœtidio, foliis deciduis amplis, florum ad ramulorum seriem sphærice cingentibus, fructu majori" (*Flora Virginica*, 61). This confusion may account for Linnæus' considering that the flowers of the evergreen Magnolia had a disagreeable odor, a mistake which he very likely discovered before the publication of his second edition, the discovery inducing him to select a more appropriate name in place of the varietal name of the first edition. But if the oldest specific or varietal name is to be adopted, *Magnolia grandiflora* must give way to *Magnolia fœtida*. The change is a most unfortunate one in every way and I have hesitated a long time before making it. In nomenclature, however, one principle or the other must be strictly adhered to, and nothing can safely be left to the judgment or the taste of the individual author. If an author believes that the oldest specific or varietal name given to a plant on or after 1753 (the date of the publication of the first edition of the "Species Plantarum") is the right one to use, the rule must be applied absolutely, or it is better to make no changes at all, and to allow the names which have come into common use to stand, whether they are the oldest names or not. Ornithologists invariably adopt the oldest specific name. Botanists, however, are still divided in their opinion on this subject. Those who agree with me that under all circumstances the oldest specific name is the

*I.—"Utrum hæ: α, β, γ, δ, ε, sint distinctæ, determinent antoptæ in folo naturali?" Linnæus, "Species Plantarum," 536.

proper one to use, will regret the change, but accept *Magnolia fœtida* in spite of its inappropriateness and the common use in all countries of *M. grandiflora*, which, by the way, is not itself a very appropriate name, as many Magnolias have larger flowers.

Linnæus' *Magnolia γ grisea* is probably only a Magnolia in part. It was based on a description in Ray ("Hist. Pl." II., 1798, not 1718, as quoted by Linnæus), of a plant cultivated in Bishop Compton's garden in Fulham. Ray's description of the fruit, "fructus hujus non conus est ut præcedentium (referring to the Tulip-tree) sed bacca calyculata," might refer to Persea; but the "florem autem speciosum tulipæ æmulum" seems to indicate that two distinct plants were confused in this description.

X. Anona laurifolia, Dunal.—Our Florida Anona was first made known by Catesby, who published in his "Natural History of Carolina" two admirable figures of the fruit and foliage with a flower in the second figure (II, t. 64-67). Upon the first of these figures Linnæus founded his *Anona glabra* ("Species Plantarum," I., 537), giving Carolina as the habitat. But Catesby does not say where he got his plant, which grows both in Florida and in the Bahamas, but not in Carolina, so that the habitat given by Linnæus was supposition. The fact of the wrong habitat and the absence of flowers from Catesby's first plate led Griesbach ("Fl. British West Indies," 5) to suppress the Linnæan name entirely and to refer this plant to the *A. laurifolia* of Dunal ("Mon. Anon.," 65). But *A. laurifolia*, to which Dunal refers Catesby's second figure (t. 67), is the same plant as the *A. glabra* of Linnæus, so there can be no question of the propriety of restoring the Linnæan name, and our Florida tree becomes *A. glabra*, Linnæus, to which it was long ago rightly referred in Chapman's "Flora of the S. States."

XV. Gordonia pubescens.—This name was published by L'Heritier in 1785 in the sixth Fasciculus of the "Stirpes Novæ." The "Arbustum Americanum," in which Marshall published this plant as *Franklinia Altamaha*, bears the same date, 1785; but as Marshall's name is quoted by L'Heritier as a synonym, it is clearly the older name and *Gordonia pubescens* must become *G. Altamaha*.

XXIV. Xanthoxylum Caribæum, Lamarck.—I had an opportunity a few months ago to examine in Paris the Lamarckian herbarium now preserved in the Museum d'Histoire Naturelle, and to see the specimen upon which Lamarck founded his *X. Caribæum*. There are leaves only; but these have membranaceous, acuminate and sharply serrate leaflets, with occasional spines on the petiole, and are quite distinct from the leaves of our Florida tree, for which, therefore, another name must be found. *X. Floridanum* of Nuttall, published in his "Sylva" in 1841 and based on the Florida plant itself, would be the name if there was not an older one. I came across in the Kew herbarium this year a specimen, collected in 1886 in Porto Rico, identical with our Florida plant, which Dr. Urban had named *X. cribrosum*, Sprengel, whose short description of his species is fairly descriptive of the Florida plant.* Specimens of our Florida tree have been sent since to the Berlin herbarium, and are pronounced to be identical with the original specimens of *X. cribrosum*, which, as this name was published in 1825, takes precedence of Nuttall's *X. Floridana* published in 1841, and our species becomes *X. cribrosum*, Sprengel.

XXXVI. Ilex Dahoon.—There has long been confusion in the names of the two Hollies of the southern states vernacularly known as the "Dahoon" and the "Cassina." The confusion started with Linnæus in the first edition of the "Species Plantarum." These two plants were there joined under the name of *Ilex Cassine*, the second or real Cassina being considered a variety of the first, the Dahoon. That Linnæus intended the Dahoon as the type of the species is shown by his reference to it of Catesby's figure in the "Natural History of Carolina" (I, t. 31), where the Dahoon is well represented and the vernacular name "Dahoon" is quoted; while to his variety he refers Catesby's figure of the true Cassina (II, t. 57). Walter ("Flora Caroliniana" 241, published in 1788) thought to set the matter straight by reversing the names so as to bring them into accord with the vernacular nomenclature, transferring the specific name Cassine to the Linnæan variety properly made a species, and making a new name, *Ilex Dahoon*, for the Dahoon Holly. The Linnæan name, *I. Cassine*, should be restored to the plant upon which Linnæus bestowed it, making *I. Dahoon I. Cassine*, and the two published varieties become *Ilex Cassine* var. *angustifolia*, and var. *myrtifolia*. It remains to find the oldest name for the Cassina. It was described by Marshall in the "Arbustum Americanum," published in 1785, as *Cassine Paraguay*; but *Cassine Paraguay* is the name ("Mantissa," II, 220) to which Linnæus refers the figure in Miller's "Icones" (t. 83, f. 1), which has opposite leaves, and is not clearly referable to a North American plant, so that Marshall's name cannot be used.* The next name is *Cassine Caroliniana* of Lamarck, but as *Ilex Caroliniana* is Miller's name ("Dict.," ed. 8) for the Dahoon, it cannot, being a synonym of another species, be taken up for the Cassina. The next name and the one which should be adopted is *Ilex vomitoria* of Aiton ("Hort. Kew," i., 170), a good name as descriptive of the peculiar properties of this species. *Ilex Dahoon* thus becomes *Ilex Cassine* and *Ilex Cassine* becomes *Ilex vomitoria*.

C. S. Sargent.

* 1. "*Zanthoxylum cribrosum*, foliolis 3-jugis, oblongis obtusis, coriaceis crenatis, pellucido-punctatis, petiolis asperis."—"Systema," i., 946.

* It is evident that the second figure on Miller's plate, the "Cassine foliis lanceolatis alternis sempervirentibus floribus axillaribus," refers to the Cassina, which is well described in the early editions of Miller's Dictionary. Linnæus, however, quotes figure 2, and his description was intended, apparently, to cover this, a very doubtful plant, and the Cassina.

New or Little Known Plants.

Philadelphus Lemoinei ×.

M. LEMOINE favors us with the following note of this hybrid Philadelphus, of which a figure appears upon page 617 of this issue. "The new Philadelphus is the result of a cross made in 1884 between *Philadelphus microphyllus* and one of the garden varieties of *P. coronarius*, the latter being the pollen-parent. The seedling flowered in 1886, when it formed a compact, nearly spherical, mass of foliage as wide as it was high. The leaves, which are narrowly oval, are about one-quarter the size of those of *P. coronarius* and nearly five times as large as those of *P. microphyllus*. The flowers, which are ranged along the branches, are large, with spreading petals. These are oval, somewhat cut at their edges and pure white. When the plant is in flower it produces a wonderful effect by the profusion and elegance of its fragrant flowers, which exhale an odor as agreeable as that of Orange-blossoms, reminding one of the odor of wild Strawberries. This new shrub is absolutely hardy here, and resists, without any protection whatever, the cold of our most severe winters.

"The cross which has produced *P. Lemoinei* has yielded a number of other plants, differing in habit, in size and in the arrangement of the flowers. We have succeeded also in crossing *P. Lemoinei* with some of the large-flowered garden varieties."

Philadelphus Lemoinei has not flowered yet in the United States and our illustration is from a sketch made last summer in M. Lemoine's garden in Nancy.

Foreign Correspondence.

London Letter.

A WEEK'S steady freezing, the thermometer registering nightly from eight to eighteen degrees of frost, has put an end to almost all out-door planting, and killed down what few flowers still remained out-of-doors. At Kew, where the amount of transplanting and planting annually done is enormous, it is usual to begin about the end of September and continue all through the winter until the beginning of May, or even later. Frost does not often interfere with this work before Christmas, and it is many years since the ground was

rendered too hard for planting so early as the beginning of December. Already the enormous collection of Berberis here has been lifted and replanted so as to afford more space to each plant. Many of these plants are very impatient of disturbance at the root, so that unless lifted with a good ball of soil they are almost certain to suffer severely. What a number of garden names there are in the genus Berberis! And that it is not easy to reduce the names to botanical order is shown by the fact that those best qualified to do it fight shy of the work. Probably a considerable number of these garden forms are really hybrids or accidental crosses of some kind, and their parentage cannot be traced. In the autumn, when clothed with their bright scarlet, orange, yellow, purple or black berries, a collection of large plants of Berberis, such as these at Kew or in the Botanic Garden at Cambridge, presents a most beautiful picture. The birds, however, soon rob the plants of their charm, and at Kew, where the birds are protected, they clear the bushes of all fruits in an incredibly short time. A large group of bamboos, which has just been planted on the side of one of the lakes, promises to be a magnificent feature next year. For purposes of this kind no plants are better suited than the hardy kinds of Bamboo. In the gardens on the Riviera they form a feature at least as striking in beauty and elegance as the Palms, also largely used there.

PALMS for in-door decoration (see p. 559) are almost universally preferred before everything else. In England there are scores of nurseries where these plants are grown by tens and even by hundreds of thousands and disposed of to market dealers. Mr. Taplin omitted to mention the several kinds of Kentia (so called), which, in England, are very largely grown; one nurseryman alone sells about ten thousand of them annually. *K. Fosteriana*, *K. Balmoreana* and *K. Canterburyana* are the three which are most used, the last named being less popular than the other two. These plants bear the exposure and hard treatment incidental to decorative uses better than any other Palm, not even excepting the Livistona (*Latania Borbonica*). They are raised from seeds imported from Australia, Java, Brazil, etc., and grown in tropical houses until large enough for use, when they are hardened by exposure to a lower temperature. Their elegant, bright green, pinnate foliage and their graceful habit are just what is most desired for the decoration of tables, side-boards, window recesses, etc. Other Palms grown largely here are *Cocos flexuosa* or *plumosa*, *Geonoma gracilis*, *Phœnix rupicola*, a most elegant Palm, *Seaforthia elegans*, *Thrinax graminifolia* and *Hyophorbe Verschaffeltii*. These are all popular and abundant. It would be easy to add the names of a great number of Palms which would prove quite as serviceable as these, which every one knows and grows, but unfortunately many of them are too rare in gardens, while seeds of them are not yet procurable. In the four hundred and odd species of Palms represented at Kew there are many which are greatly admired on account of their elegance and other attractions, but they are not in the trade. In tropical countries, as, for instance, in Ceylon, Calcutta, Brazil, Brisbane, etc., collections of Palms are being gathered and planted with a view to the supply of seeds for the European market, and the seeds of many Palms which are now rare will soon be plentiful. Evidently popular taste runs just now on Palms, many of the growers for the London market devoting themselves almost exclusively to these plants.

A PERFECT PLANT LABEL is still a desideratum, here, as well as in America. Mr. R. T. Jackson's paper on "Methods of Labeling Trees and Plants," read before the Massachusetts Horticultural Society last year, is interesting and suggestive. In it Mr. Jackson appears to have come near to what we have found the most useful label at Kew, both for in-door and out-door plants. For temporary labels, such as are used for annuals and small nursery stock, there is nothing better than wood; but for permanent labels intended for collection plants, something more durable than wood is required, and the best material appears to be zinc. Iron, tin, slate, porcelain and teak have been and are still in use at Kew, but on the whole they are not as satisfactory as zinc. As Mr. Jackson says, zinc "is reasonably imperishable, cheap and very easily handled." The chemical ink recommended for writing upon polished zinc, namely, a solution of chloride of platinum, or chloride of copper, or other patent mixtures of a similar nature, have not, however, proved a success, no matter how applied. Varnish rubbed over the face of the label after the ink has dried, preserves it from oxidation for a year or so, but as a rule the names are almost unreadable after a year's exposure outside. An improvement on this ink is the use of enamel paint, applied as follows: The labels are cleaned with emery paper and then coated on the face with white enamel paint. This is allowed to get quite dry, and then over it is painted a coat of the black enamel paint. The writing must be done while the black paint is wet, using for the purpose a pointed stick, such as a bit of bamboo shaped like a pen. In writing, the black paint is simply removed by the point of the stick. With a little practice the letters are as easily and clearly formed as if with pencil on white paint. The label should be thoroughly dried before being exposed to moisture. For trees and shrubs such as the labels can hang upon, the form preferred is a piece of zinc from three to four inches square, half an inch at the top to be bent over at an acute angle to afford protection from the weather; one or two holes should be made near the top, for wire or nails. For pots and herbaceous plants

Fig. 154.—Philadelphus Lemoinei ×—See page 616.

strips six or eight inches long, and shaped like the ordinary "tally," are best. These are easily cut out of a sheet of zinc with a pair of strong scissors. Labels thus prepared have been in use at Kew two years and they are as perfect now as when they were first written. In the tropical houses, where the atmosphere is saturated all the year round, these labels are quite as good as in a dry house or out-of-doors. The first experiment with them was made with the Filmy Ferns, for which durable and neat labels were much wanted. They have stood this test. In appearance these labels are all that need be desired. They are not too conspicuous and therefore do not offend the eye as white labels do; on the other hand, they are easily read. In public gardens, such as Kew, labels are of considerable importance, as also they are wherever valuable collections of plants are grown. So far as our experience goes, this zinc label, when prepared as here directed, comes nearest to what is wanted.

The diseases of plants are many and mysterious. Every gardener has had experience of their ravages in some form or other, and probably, also, has been disheartened by his failure to check the enemy by any means known to him. Canker, club, mould, rust, scab, spot; these are familiar terms in horticulture, but few, if any, horticulturists have a clear knowledge of what these diseases spring from, much less how they can be cured. It is only recently that one of our most eminent amateur horticulturists expressed to me his conviction that "spot" in Orchids was due to the attacks of some parasitic fungus, and that he always took the precaution to remove any leaf which showed signs of the disease. Had he been right in attributing the disease to a fungus, this action would be commendable. But it has been decided by one of our most eminent physiological botanists that Orchid "spot" is certainly not fungoid in its nature. This case is noteworthy as showing how much we are in ignorance of the real nature of the numerous diseases to which plants under cultivation are subject. The publication, therefore, of a trustworthy book dealing with some of the diseases of plants, may be hailed with pleasure by gardeners. Professor Marshall Ward, who is one of the most eminent of the modern school of botanists, and who has paid special attention to vegetable pathology, has written a delightfully readable book on this very subject. It is published by the Society for Promoting Christian Knowledge, and is one of a series of publications called "Romance of Science." The diseases treated upon by Mr. Ward are the commonest and best known, such as potato disease, smut, rust, hop disease and lily disease. These are diagnosed and prescribed for in a manner easy to understand, and at the same time thoroughly. One is surprised to read in the introductory chapter that "between 1866 and 1889 the amount of research in this department has been enormous, and the literature of the subject has become overwhelming." I once had occasion to collect information on this very subject, but could find exceedingly little, in English at any rate. Mr. Ward has made a beginning, and we may hope that he will extend his investigations to other of the diseases of plants besides those treated upon in his book. A really comprehensive, reliable book on the whole subject of plant diseases, and written for horticulturists and farmers, would be of great service. Mr. Ward himself says: "The time is rapidly approaching when a farmer or a gardener will as little dare to neglect the study of the physiology and pathology of plants as a surgeon dare practice without a knowledge of anatomy, or a sailor hope to become a captain without studying navigation. Moreover, these are not studies which will bear trifling with, and he who hopes to understand them must take the necessary trouble to learn how to trace the connection between cause and effect, and scientifically reason from the simple to the complex. In this department the days of empiricism are indeed numbered." Mr. Ward's book is precisely what is wanted as a beginning. It is published in New York by Young & Co. The price here is two shillings and sixpence.

Anthracite Coal.—The fitness of this as a substitute for coke has been the subject of discussion here for some time, as the result of a rise in the price of the latter. It is stated by some who have used anthracite for years that a considerable saving is effected as compared with the cost of coke. But it does not appear to be satisfactory in all cases. An eminent American nurseryman when at Kew a little while ago informed me that anthracite is universally preferred to coke in America. It would be interesting to English readers of Garden and Forest if some one acquainted with the peculiarities of coke and anthracite, when used for horticultural heating, would relate his experience. We find a difficulty in using the anthracite for furnaces originally intended for the consumption of coke.

London. *W. Watson.*

Cultural Department.

Some Wild Flowers of California.

Phacelia Parryi is one of the loveliest of the annuals of southern California and a universal favorite among those who have made its acquaintance. Every one who sees it face to face feels an instant admiration for its beauty, and a kind of friendship for it such as we experience in our intercourse with the Pansy and other flowers which confront us with something akin to a human expression.

The plant delights in warm, sunny exposures, on the banks of cañons, among the foot-hills, in fertile valleys and on the hill-sides. It extends in San Diego County from the seashore to the confines of the Colorado Desert, southward to near San Quintin Bay, Lower California, and perhaps beyond. It has an open, rotate corolla of a rich and brilliant royal purple, well set off by the dark green foliage. Occasionally a flower may be found of a paler color, sometimes nearly white. With nearly all of our native flowers that are normally purple in color, I find albinism a common occurrence, though rarer in some species than in others. This rule, if such it may be called, is also true of purplish pink flowers, like Erythræas.

In the spring of 1884 there was an unusually abundant rainfall, which played havoc with our roads, but the botanist who was driven to little used thoroughfares found himself repaid by the wealth of luxuriant vegetation which followed. A new grade had been built the previous season from San Diego City, leading into the old mission valley, and along the freshly cut embankment I found this beautiful plant growing in the greatest abundance. Since then it has been almost totally absent from this locality, not more than a score of plants growing on this road during the spring-time of 1889. Why this sudden disappearance? is the question which naturally arises and remains unanswered. The existing conditions seem equally as favorable as in other localities where it still thrives—and often in close proximity to well traveled roads.

For cultivation I should call this one of the most desirable of the many pretty annuals which California affords to the horticulturist. It is capable of most effective display, and under favorable conditions will produce a profusion of flowers for months.

Dodecatheon Clevelandi shows itself, generally, in early spring over the hills, mesas and valleys of southern and Lower California, especially near the coast. The flowers pass from clear pearly white through lovely shades of pink and rose-red into a brilliant purple, and a large field thickly dotted with their nodding heads is a vision of loveliness familiar to Californians. For many years this and numerous other forms throughout the western states have been known to botanists as the *Dodecatheon Meadia* of Linnæus. Within recent years Mr. E. L. Greene has studied our Californian forms, describing several as new species, and naming this in honor of the earliest resident botanist in San Diego, Mr. Daniel Cleveland, whose early collections brought many new plants to light. It is scarcely worthy of specific rank, but for cultural purposes may be allowed that honor. Every child is sure to gather large handfuls of the fragrant flowers when spring comes, and each has some pretty name for them, such as Rabbit-ears, Shooting-stars, Johnny-jump-ups or Mad Violets.

This flower should become as general a favorite as the Cyclamen. The perennial roots are easily transplanted, and no difficulty should be experienced in making it thrive in eastern houses and gardens. In California they may be planted as borders to beds, or grouped in masses, or dotted thickly over a garden as if they were wild. The broad leaves form a pretty rosette before the one or more spikes of flowers appear. The flowers are admirably adapted for bouquets and the use of florists, and their good qualities are already recognized away from their native home.

Gilia dianthoides bears a flower which in size and beauty is out of all proportion to the plant itself, which consists only of a slender, wiry stalk, half an inch or so in height, with narrow, inconspicuous leaves; but from this stalk appears one or several rotate, rosy pink flowers, half an inch across. The flower is of such a delicate texture and is borne so near the ground that it is scarcely available for any decorative purpose; but a field carpeted with them as they shine in the morning sunlight, cannot fail to kindle admiration. Under favorable conditions the plant attains a larger size and forms a dense mat spreading out over the ground. In cultivated fields I have found a single plant spreading in this way more than a foot across—completely hidden by the numerous wide-awake flowers. It is not rare to find a plant with pure white flowers, especially among the foot-hills. A similar species (*Gilia Orcuttii*), with white

flowers slightly variegated with purplish red, was collected in 1883 on a mountain in Lower California, but has not since been seen. Another equally beautiful species (*Gilia bella*) was discovered on the high table lands of northern Lower California among the Pinyon Pines, and I have since seen it abundantly on the mountains bordering the Colorado Desert. It has the same characteristics as the last, but more brilliant and darker flowers of smaller size.

San Diego, Cal. *C. R. Orcutt.*

Large Glass in Green-houses.

MY first green-house was a small one, twelve by thirty-three feet in dimensions, with benches against the sides and a path down the centre. It was covered with a span-roof made of hot-bed sash of three by six feet dimensions, which were set with six by eight inch glass; it had a ridge made of boards two feet wide, which cast a shadow always, and the wood of the sash-bars and heavy rafters caused more shade still. Standing north and south, the shade, as the sun passed across the sky, was shifted from west to east, and in dark days and cloudy weather, with the sun low in the sky, the house was still more in the shade than in the fuller sunlight of the spring months, when the sun was higher.

This house is now used for growing Geraniums, Fuchsias, Verbenas, Petunias, Pansies, Callas, and other vigorous flowering plants; also for Dandelion, Radish, Cress and the like, among vegetables. I knew the lack of sunlight affected the growth and vigor of the plants to a considerable extent, but did not realize how much till the past season.

Last September I completed a structure, thirteen by twenty-five feet in dimensions, the south front covered with glass, and the back kept dark for storing things that did not need light, like Celery, Endive, Spinach and Salsify.

The front, five by twenty-five feet on the south side, was covered with double thick glass, sixteen by twenty-four inches in size, on slender rafters six feet long. I never had success with Lettuce in the span-roof house, but the other things mentioned always did well. In September last I set Lettuce in the new house, directly under the glass, and the contrast in growth was most marked. In the new house the Lettuce grew steadily and rapidly in the almost unobstructed sunlight, and made good heads for market, much better than had been obtained from the old house. The plants were free from the green fly and were grown without fumigation or artificial heat from September to December, while that in the span-roof house—a few plants put in as an experiment to test the comparative merits of the two houses—was as poor as usual. Although the house has been occasionally fumigated and supplied with some artificial heat, the Lettuce is still too small for market and is also troubled with the green fly.

This is an object lesson that is very convincing to all who have seen the contrast in growth and vigor in the tree houses. The chances were all in favor of the Lettuce in the old house, if care and attention could avail, but when simply left alone to grow in the free sunlight, that in the new house was altogether superior.

The Petit-Trianon at Versailles.—See page 614.

Lettuce has always been considered to be specially difficult to grow under glass, from its tendency to damp off and rot. Slow growth and the green fly have also been great hindrances, but in the light of this experience, sunlight seems more essential than any special care.

Houses twenty-two by two hundred feet, covered with sixteen by twenty-four-inch glass, on rafters three by four inches, facing the south or south-west, ten feet high on the back and three on the front, with sunken paths, and arranged to be aired across the beds, make the best houses so far devised for Lettuce-growing; and the same principles applied to a smaller house should produce similar results.

West Springfield, Mass. *W. H. Bull.*

Orchid Notes.

Vanda cærula.—Taking a survey of the hundreds of Orchids known, one cannot fail to be struck with the remarkable scarcity of blue flowers among them. Such colors as red, orange, scarlet, yellow and their intermediate shades are well represented; various hues of crimson and purple (which, artificially, cannot be obtained without the assistance of blue) are frequently met with; and white—although artists

say such a color does not exist—forms the ground color of many flowers, but is very rarely seen absolutely pure. But blue—real blue—is conspicuous by its absence. The number of Orchids whose flowers are of this tint would not take long to enumerate. It is chiefly noticeable among such South African plants as *Herschelia cœlestis, Disa longicornis, D. maculata, D. venusta*, and perhaps a few others. Bright blue is the characteristic color of the Australian Caladenias, and light and dark shades of the same color are found in the small-flowered Burmese *Vanda cærulescens* and the larger and more beautiful *V. cærulea*, the latter forming the subject of the present note.

It was named by its discoverer, Griffiths, who first found it in 1837 near the River Borpanee, where, at an elevation of 2,500 feet, it was growing in forests of Pine and Oak on trees of Gordonia, a Ternstrœmiaceous genus. Hooker and Thomson, when traveling in that region several years ago, met with it in a wild state on the Khasya Hills at a height of 3,000 to 4,000 feet. It grew in such abundance that in a short time they obtained no fewer than 360 spikes, each bearing from six to twenty large flowers.

The introduction of *V. cærulea* to cultivation is due to Messrs. Veitch & Sons, of Chelsea, who received plants of it from their famous collector, Thomas Lobb, about forty years ago. Owing to the unique color of its flowers, it caused at the time a great sensation, and even nowadays a well grown specimen calls out many expressions of admiration. With the exception, perhaps, of the magnificent *V. Hookeriana*, noted at page 392 of Garden and Forest, and the gorgeous *V. Sanderiana*, it is perhaps the finest Vanda yet known. Well grown specimens are from eighteen to thirty inches high, their stems being furnished with distichous, oblong, leathery leaves, about six inches long, and deeply bilobed at the apex. The flexuose peduncle springs from the axil of a leaf about midway on the stem, and bears a variable number of flowers, each from three to four inches across, and supported on pale violet, sharp-angled pedicels about three inches long. The sepals and petals are more or less oval in shape, and vary in color between light and dark blue, handsomely reticulated with white veins, giving to the flowers a mottled appearance. The small, narrow, projecting lip is of a deep violet blue, and is furnished behind with a short conical spur, at whose opening is a pure white auricle on each side, and at the base of the short, thick, white column are a pair of bright yellow crescent-shaped blotches.

Last September I saw two fine specimens of this Vanda in flower in the Royal Gardens, Kew. One plant had a spike of fourteen tolerably deep blue flowers nearly four inches across. At the same time a plant was blooming in this nursery with twelve flowers on the spike. Each flower measured four and a quarter inches across, and was of an intense blue, a shade which is seldom seen in this species.

When *V. cærulea* was first introduced to cultivation, the fact of its being a native of India was sufficient reason in those days for it to be regarded as a stove plant. The altitude at which it grows in its native haunts not having been taken into consideration, the warm treatment which this species received naturally produced such disastrous results—most of the plants dying—that it remained a rare plant until it became more common by the importations of later years. A cool, airy house, with a temperature of sixty to sixty-five degrees Fahrenheit, suits this species best in summer, although no harm will result if the thermometer rises a few degrees more with the sun, from which the plants must be shaded when it becomes too warm. The plants make their growth during the spring and summer, and must then receive more or less liberal supplies of water, according to the vigor of their growth. When this is about to cease the flowers appear, usually in September and October, and if kept in a dry atmosphere they will retain their freshness for six weeks or more. During the winter months the plants should be rested, and only small quantities of water are occasionally required. Well drained pots, baskets or cylinders are suitable for the cultivation of this species, plants of which will thrive either simply in crocks and charcoal, top dressed with fresh sphagnum, when more attention must be given to watering, or in a compost of rough peat, sphagnum and charcoal, well mixed.

St. Albans, England. *John Weathers.*

Odontoglossum Sanderianum.—This is a charming free-flowering Orchid, its value being greatly enhanced by a delightful Hawthorn fragrance. By many this plant is considered only a superior variety of *O. constrictum*, but it is more probably a hybrid between that species and *O. gloriosum*. This is evident more especially in its larger and more robust growth, and the erect character of the inflorescence. The fragrance must also come from *O. gloriosum*, but *O. Sanderianum* is an extremely variable plant, and the good varieties are by no means plentiful. Even the poor ones will be found very useful for cutting, and a batch of plants will ensure flowers almost every month in the year. They grow freely and strong spikes will produce nearly a hundred blooms.

Trichosma suavis.—This pretty little plant is now in flower, and greatly appreciated for its delicious fragrance. It is the only species of the genus, and, though introduced fifty years since from the Khasya Hills, has always been a very rare plant. Recent importations, however, have brought it within the reach of all. It thrives in the cool house potted in peat and moss, and watered as if it were a bog plant. The reed-like stems are clustered, about ten inches long, and terminated by two lanceolate fleshy leaves, from between which spring the short racemes of creamy white flowers, about an inch across. The side lobes of the lip are prettily striped with crimson, the wavy, recurved middle lobe bearing a yellow, crispy crest on the disk. The flowers last quite a long time on the plant, and, though not showy, they are very attractive and fragrant. Altogether, this Orchid is a genuine acquisition, especially since it may be grown in a cool house with greenhouse plants, its greatest requirement being abundance of water.

Kenwood. *F. Goldring.*

Some Good Variegated Plants.—Prominent among variegated plants of comparatively recent introduction is *Ficus elastica variegata*, which will probably be largely used for decorative purposes as it becomes more plentiful. Its growth seems to be nearly as vigorous as that of the type, and the large leaves, well marbled with light green and creamy white, make it a pleasing contrast with the dark foliage of the species. Some difficulty has been experienced in rooting cuttings of this variegated Ficus, it being more shy in this respect than the green form; but this trouble has been overcome to a great extent by grafting it on the latter.

Dracæna indivisa variegata is another interesting addition to this already numerous family. It is very similar in general appearance to the type, having the same gracefully arched foliage, with the additional charm of variegation in the form of stripes of creamy white. This plant probably originated as a chance seedling.

Another introduction of considerable merit is *Heliconia aureo-striata*, which in form somewhat resembles the Hedychiums, and has large, robust, Canna-like foliage from one to two feet long. As its name indicates, this Heliconia is variegated with fine stripes of yellow, the stripes to a greater or less extent following the plan of the venation of the leaves from midrib to margin. It has thus far been grown in stove temperature, but it is quite possible that it may prove useful outdoors in summer, and if so, its varied utility will give it greater value. It may be propagated by division, and grows well in light loam when given an abundance of water.

Holmesburg. *W. H. Taplin.*

Kniphofias.—When noting these plants in a letter to you last year, I mentioned Mr. Gumbleton, of Cork, as being a careful collector and cultivator of Kniphofias. He has lately contributed to the *Gardeners' Chronicle* a series of notes and observations on the species and varieties which he cultivates, and which have flowered during the past summer and autumn. Mr. Gumbleton often falls foul of plants which many of us consider handsome enough to cultivate. To win his admiration a plant must have undoubted merit. It follows, therefore, that anything recommended by him may be taken as deserving a place in the garden. The number of Kniphofias noted by Mr. Gumbleton in the communication referred to is twenty-seven species and varieties, whilst he professes to cultivate no less than forty. In English gardens these plants, commonly known as "Red-hot Pokers," are used very effectively both as masses on lawns or by the side of water, or as border plants. Many of them flower late in the autumn, several massive beds at Kew having been quite ablaze with flowers until a few days ago. The hybrids are mostly of exceptional merit, being, as a rule, hardier and freer in flower than the species. Mr. Max Leichtlin, of Baden-Baden, has been a breeder of Kniphofias for some years, and he has this year several which differ both in form and color from anything hitherto seen. They are the result of crossing *K. comosa* and *K. Leichtlini*, both Abyssinian species, with those which are natives of the Cape. It is a remarkable fact that these plants, which mostly come from tropical or semi-tropical Africa, are hardy in the warmer parts of Great Britain, whilst many plants from cooler parts of the same continent will bear only a moderate amount of cold.

Kew. *W. Watson.*

Coreopsis Drummondii.—Few flowering plants can compare with this for winter cutting, either in beauty or productiveness. It excels *Leptosyne maritima*, *Chrysanthemum segetum*, or the yellow variety of *C. frutescens*, and, at the same time, does not require half the care. A few seeds sown in September gave us plants which are blooming now and will continue to do so all winter. Florists could plant them about eighteen inches apart, in borders, giving about three feet of head room, but, for convenience, they can be grown in ten-inch pots. They will take almost any quantity of water and delight in liquid manure frequently.

The flowers coming from a packet of seed will vary in shade of color and in form and size of flower, but with careful selection, which we have adopted, a very fine and constant variety may be obtained.

Alpine Auriculas.—Like many other so-called hardy plants, these require some protection in winter in order to grow them well, but they are worth the trouble. We have made a specialty of them for the last two or three years, forcing them first sufficiently to have them in bloom two or three weeks before the natural time, which is in the early part of May. For this purpose we pot about twenty-five and leave the remainder in a cold-frame covered with a few Pine-needles. Auriculas are easily raised from seed sown in a cool frame, from which frost is barely excluded, about the first of February. They will make good plants the first year and bloom the following spring. The soil most suitable is a good loam with well decayed manure. Green manure should never be used with them. *T. D. H.*

Wellesley, Mass.

Quercus dentata.—The Daimio Oak of Dr. Hall is said to be (p. 537) about twenty-two feet high and the finest the writer has seen. I did not know I had one so near the best. Mine is twenty-two feet seven inches, and measures twenty-five inches in girth one foot from the ground. Plants grafted from this tree have borne acorns, though smaller trees, of course, than the parent. It is one of the most rapid growing of all Oaks. Three feet for one season is not uncommon; and I have had branches five feet. My tree was from an acorn from Japan, kindly given to me by my friend Peter Henderson, not so many years ago, though I neglected to note the exact date.

Germantown, Pa. *Thomas Meehan.*

Elæagnus angustifolia.—The note on page 600 in regard to the Indian variety of Elæagnus "known in gardens often as *E. angustifolia*," suggests a good word for the typical *E. angustifolia* of east Europe and central Asia as an ornamental tree, and a windbreak tree for the prairie states. As we have received it from Riga, Proskau, Voronesh and other points in east Europe, and as introduced extensively into Nebraska by the Russian Mennonites, it does not appear to vary in hardiness, habits of growth, size of tree, or beauty of foliage. It is a much larger and stronger grower than the form known as *E. hortensis* of south-west Europe, yet it is quite as handsome in expression and as fragrant when in bloom.

We now have trees in Iowa, chance introductions, fully thirty-five feet in height and with a diameter of trunk of nearly one foot. As to hardiness, I have seen it growing in perfect health on the Red River of the North at Fargo, and I have never known it injured in any part of north Iowa during our recent test winters. It is a dry-climate plant and I suspect it will thrive much better on the prairies than in the relatively moister and cooler summer air of the states east of the lakes.

In isolated positions, with the stem trimmed up, it stands much better than our native Shepherdia of the upper Missouri, which sun-scalds with us on the south side of the stem if trimmed into tree form.

The *E. argentea* of the upper Missouri is also perfectly hardy as a bush upon the prairies, as is the *E. macrophylla* of central Asia; but unlike the *E. angustifolia*, these handsome bushes are great sprouters, and will not, probably, become popular for ornamental planting.

Berberis Thunbergii.—Mr. Jack's words of praise of this Oriental Barberry are well merited and I am glad to state that it is a thing of beauty also in our trying climate. As Japanese plants are tender with us, I suspect the species is from north-west China or central Asia. We have a section of low spreading hedge of this plant beside one of our drives which attracts much attention during the growing season, and at this time (December 14th) the berries are as bright and handsome as in early fall. That it is a distinct species is shown by the fact that seedlings we have grown retain the peculiarities of habit, leaf and fruit of the original plants. *J. L. Budd.*

Ames, Iowa.

Correspondence.

In the Hickory Matter.

To the Editor of GARDEN AND FOREST:

Sir.—In the issue of GARDEN AND FOREST for September 25th (vol. ii., pp. 459, 460), under the heading "Notes Upon Some North American Trees, XI.," being an installment of the exceedingly valuable and interesting series of papers upon this subject from the pen of the editor-in-chief, there is a discussion of the questions raised by me last November (*Bull. Torrey Club*, xv., 277), as to the generic name and classification of the Hickories. As I believe, however, that neither Professor Sargent nor I have written all that might advantageously be written on this subject, I venture to send you the following additions.

And, in the first place, I am of the opinion that there are more valid species than either he or I have yet been able to define. The specimen with curiously pallid under-surfaces of the leaves from Lookout Mountain, Tennessee, alluded to by me at the place above cited, may well be taken as an indication of an addition to the lists, from a region as yet but partially explored. Then there is a specimen here, collected by Mr. Frank Tweedy in Tom Greene County, Texas, evidently of the Pacanier section of the genus, but differing from the Pecan in its markedly punctate leaves and some other characters. As there are two names published, viz., *Hickoria Texana*, Le Conte, and *Carya Texana*, C. DC., both based on specimens of Texan origin, neither of which have yet been satisfactorily referred by subsequent writers, and Mr. Tweedy's specimen is only in flower, we are not yet able to characterize the species which it represents. Most likely it is *H. Texana*, Le Conte, but that was described from fruiting specimens only, and no mention is made of punctate leaves. *H. myristicæformis* has punctate leaves, but belongs to the other section (Euhicoria) of the genus, unless, indeed, its separation into two sections, as indicated by me, should be annulled by this Texan tree, a point which complete collections only can determine.

Professor Sargent differs with me in the spelling of Rafinesque's generic name, replacing the feminine noun *Hicoria* by *Hicorius*, which is masculine in form. Some of the reasons which governed me in taking up *Hicoria* are given in considerable detail in my paper above cited. There are a good many others, however, which my learned critic appears to have overlooked, but which hardly seemed necessary to establish my position. I did not discuss the fact that the names of trees are feminine in the Latin language, and that the Latinization of the Indian name "Hiccory" would naturally be *Hicoria*; nor did I allude to the fact that Rafinesque's two modes of spelling actually represent but one word, which even made of masculine form in *Hicorius* would yet be feminine, and the specific names must agree in gender, and become, at any rate, *H. alba*, *H. glabra*, *H. minima*, etc., rather than *H. albus*, *H. glaber* and *H. minimus*, as he has written them. Clearly the two modes of spelling do not represent two genera, for there could not be *Hicoria* and *Hicorius* any more than *Popula* and *Populus*. The eccentric Rafinesque recognized this, for he wrote in his "Flora Ludoviciana" not *Hicorius integrifolius*, but *H. integrifolia*, and elsewhere used the two spellings interchangeably. And so I do not think Professor Sargent's charge that I have made a lot of synonyms will be considered a just one by students of botany or dendrology.

But the point in which he appears to me most at fault is in the following statement; he says, in speaking of Rafinesque's separation of the Hickories from the Walnuts: "His first attempt was made in 1808, in the *Medical Repository* (v. 352), in which, in a single paragraph, he simply enumerated, after the word *Scoria*, the specific names, in parenthesis, of five Hickories." Now, I do not wish to accuse Professor Sargent of unfairness, but I must reproduce here, for the sake of argument, just what Rafinesque is made to say at this place:

"*Scoria* (tormentosa, mucronata, alba, pyriformis, globosa, etc.), *Juglans alba*, L., tomentosa, mucronata, Mich., etc. The Hickory."

Now, it is just as plain as day that Rafinesque indicated here a generic name for the Hickory, by giving the equivalent names already published by Linnæus, Michaux and others under *Juglans*. This method of publication, by citing equivalents, has been used more or less by all modern authors. Indeed, Professor Sargent has himself used it in the very article I am now discussing. Desvaux, in translating Rafinesque's paper into his *Journal de Botanique*, has it "*Scoria tomentosa, mucronata*, etc., ce sont les *Juglans alba*, L., etc."

(vol. ii., 170, Paris, 1809), showing that this was well understood at the time.

But, as I have elsewhere contended, Rafinesque evidently wrote *Hicoria*. The whole of his article in the *Medical Repository* shows faulty proof-reading, or no proof-reading at all, and the word came out *Scoria*. Afterward, except in the Louisiana Flora (1817), Rafinesque wrote it *Hicoria*, and the proof that he so wrote it originally is to be found in the following statements:

In the "Good Book and Amenities of Nature," pp. 48, 49 (1840), he says: "In the continuation of these trees in the 'American Grove,' American novelties are still more numerous. . . . The monographs of new and revised sp. are *Calycanthus*, 5 sp.; *Myrica*, 12 . . . of Hickory trees or *Hicoria*, Raf., 1808, 4 subg. and 4 new sp. . . ."

In his "Alsographia Americana" he says: "*Hicoria*, Raf., 1808. *Carya*, Nuttall, 1818, etc. As early as 1804 I proposed to separate the Hickories from the Walnuts, to which Muhlenberg objected. I did so in 1808 in my remarks on Michaux's Flora, and again in 1817 in my 'Florula Ludoviciana,' giving the almost Grecian name of *Hicoria*; yet Nuttall changed it in 1818 into *Carya*, which means merely nut. . . ."

Dr. Torrey has it *Hickoria* in his Catalogue of Plants growing within thirty miles of New York (1819), citing it as a synonym of *Carya*. There is a letter of Rafinesque extant protesting against this, and especially against the *k*. The word has also been spelled with a *k* by Le Conte and others, but there appears to be no authority for it.

It is, therefore, apparent that there is no valid choice between *Hicoria* and *Hicorius*; the only issue that can be raised is between *Hicoria*, a strictly applicable Latinized aboriginal name, and its misprint, *Scoria*, which, from what I have shown, can hardly be seriously taken up by any botanist.

Columbia College. *N. L. Britton.*

[Dr. Britton's point as to the date (1805) of the establishment of the Rafinesquian genus would seem to be well taken, as there is no doubt what the species were that Rafinesque meant to include in it, and, consequently, no ambiguity in regard to the limits of his proposed genus can exist. His view is enforced by a canon (XLII.) of the code of nomenclature of the American Ornithologists' Union, which affirms that "The basis of a generic or subgeneric name is either (1) a designated recognizably described species, or (2) a designated recognizable plate or figure, or (3) a published diagnosis," to which is added as remarks: "Some writers insist that a generic or subgeneric name, in order to be tenable, must be accompanied by a diagnosis. However proper such a requisition may seem theoretically, the principle is thoroughly impracticable, and if enforced would lead to hopeless confusion. The custom of naturalists has been quite otherwise, and the mere mention of a type has been found to be often a better index to an author's meaning than is frequently a diagnosis or even a long description. Either of the three alternatives given above may alone be accepted as a proper definition. In the case of a diagnosis it must, of course, give some character or characters by which the organism it is intended to designate may be unmistakably recognized."

The question is, therefore, properly between Scoria, as printed, and Hicoria. The evidence points to a misprint certainly; and as a misprint it may, according to the rigid rules in nomenclature, be corrected. ("A generic name should subsist just as it was made, although a purely typographical error may be corrected." A. De Candolle.)—Ed.]

The Destruction of Evergreens for Christmas Decorations.

To the Editor of Garden and Forest:

Sir.—That the recent Forestry Congress in Philadelphia, which evidently had the preservation and prosperity of our forests honestly at heart, made no protest against the wholesale destruction of shapely young evergreens every year as Christmas-trees, strikes an interested onlooker as, at least, demanding comment. If this German fashion of sacrificing a tree at the Christmas-tide were a harmless fad, like the sending of holiday cards, or one likely to wear itself out before much positive hurt is done, it might pass unrebuked. But it is a growing custom, and has already reached such proportions that the yearly December slaughter of the "innocents" unquestionably amounts to 1,000,000 or over east of the Mississippi River. That such an enormous devastation cannot long continue without impoverishing the forest supply of the future must be apparent to every one. No true lover of trees or intelligent patriot can behold the slain evergreen beauties stacked in the market-place at Christmas-time and consider their ultimate fate without a pang of regret, and even of anger, at the thoughtless sentiment that is gratified through such wicked waste, to say nothing of the ruthless extermination of various evergreen growths, which, if left undisturbed, make our woods forever beautiful, but, when woven into wreaths, soon perish, and then feed the fire or the garbage gulch.

No one is necessarily any the happier for the Christmas-tree, and the children who have been reared to regard the sacrifice of a lovely young tree for a few hours' entertainment as wicked and cruel, are as happy—if not happier—than the youngsters who, through custom, think Christmas a poor thing without a tree.

It is a possible thing in many families to use Orange and Oleander trees, which are grown in tubs, for Christmas decorating. It is also possible in many localities for young evergreens to be lifted, especially from nurseries, out of the ground, and the roots so cared for that the tree may be used for planting after the Christmas use is over, to live and grow into a perennial joy, more beautiful when decorated by nature with frost and gleam than a poor, murdered tree ever was, hung with strings and tinsel.

Seriously, is it not high time for all good people to frown upon a Christmas-custom that is neither Christian nor common sense, and which is at once so unnecessary and so harmful?

Bryn Mawr, Pa. *Mary Wager-Fisher.*

[The trees which are used in the eastern states at Christmas are usually the Black Spruce and the Balsam Fir. The Hemlock, the Arbor-vitæ and the White Pine are used less commonly. These trees, where they spring up naturally, grow so close together that they are subjected, almost from the beginning of their existence, to a fierce and continuous struggle for life, in which hundreds perish where a single individual reaches maturity. The young trees in these forests would grow more quickly and with less expenditure of vital force if man would come in and help nature to destroy the weak for the benefit of the strong. This is what thinning means in forest-management. The coniferous forests of the United States can supply Christmas-trees for the whole world ten times over every year and be improved by the operation, provided they are cut with this purpose in view. The danger in this, as in every operation in the American forests, is, that the future is sacrificed for the present, and when young trees are cut for the Christmas-markets they are cut without any reference to the effect their removal will have on the future growth of the forest. This business is only a little rivulet added to the great stream which for two centuries has been slowly draining the American forests, and which is going to exterminate them unless some change takes place in the attitude of the American people toward forest-property. Nature does not recognize the infallibility of republics; nor can Americans, any more than less fortunate people, tamper with the workings of her immutable laws without incurring the penalties which follow their violation.—Ed.]

Wanted, a Chart of Standard Colors.

To the Editor of Garden and Forest:

Sir.—Permit me to call attention to an urgent need, which I believe is felt almost universally by naturalists—a complete nomenclature of colors for field use. It is not strange, without a standard authority upon the subject, that the colors of flowers are so rarely given with anything approaching uniformity or correctness. There are many puzzling shades and tints in nature which even artists who have made a special study of colors cannot name or correctly reproduce at first trial. It is even more difficult in animal life to correctly describe color, and this is found especially true when attempting to define the life colors of certain marine forms of the lower vertebrates and invertebrates. Mr. Robert Ridgeway, of the United States National Museum, has attempted to supply this want among ornithologists in an expensive volume encumbered by a dictionary of ornithological terms and other

technical matter, of use only to ornithologists. Further, as it was primarily designed for orinthologists, only those colors which obtain in our native birds are shown, and many colors and shades of common occurrence among our flowers and in the lower ranks of life are wholly unrepresented in the colored plates. Will not some one prepare a pocket edition, adapted alike to field and study, that shall, as far as possible, show every color in nature, and state also what combinations are necessary to produce each? *C. R. Orcutt.*

San Diego, Cal.

The Disappearance of Wild Flowers.

To the Editor of GARDEN AND FOREST:

Sir.—In addition to the causes of the disappearance of our wild flowers, as stated by Professor Beal on page 527 of GARDEN AND FOREST, I would cite another. For many years I had been in the habit of visiting a cosy nook on Long Island, New York, where the *Sanguinaria Canadensis* grew luxuriantly, the ground being completely covered with foliage and flowers, in their season. The past spring I again visited the wood, after an absence of three years, but scarcely a flower was to be seen, only here and there one in the thicket, away from the former mass. Neither were there any tree leaves on the ground, the owner of the wood having raked them all off for bedding purposes, the result of which was the loss of our favorite flowers. The removal of the leaves left the Blood Root without the winter protection it needs. I think this will account for the loss of a great many of our native plants; the clearing of our forests has removed the protection that nature afforded them. *C. L. Allen.*

Floral Park, N. Y.

The National Flower.

To the Editor of GARDEN AND FOREST:

Sir.—The national flower should be as nearly universal in the states as possible. It should be a home flower, not imported. It should lend itself to art in form and color. It should be significant of a national sentiment and embody an American idea. Let me suggest another, yet unnamed, for the honor of representing our country, namely, the Starwort or Aster. It is more abundant in North America than elsewhere. One hundred and twenty-four species belong to our flora. It ranges from the Atlantic to the Pacific and from Canada to Central America. It is beautiful; it is hardy; it is perennial; and deserves the sentimental regard of all who see it yearly adorning our fields and woods in summer and autumn.

Let the wild Aster be our country's flower.
See how it gems with stars the glorious flag!
Onward it spreads, the symbol of our power,
"The Star of Empire," past each barrier crag;
And every blossom, many joined in one,
Presents the Union, peace and freedom won.

Cambridge, Mass. *E. S. D.*

Recent Publications.

A Rambler's Lease, by Bradford Torrey. Houghton, Mifflin & Co., 1889.

This little book is a record of the impressions and observations of one who, in the phrase he quotes from Charles Lamb, delights to "walk about, not to and from." Such books, as we have had occasion to say more than once before, are growing to be a prominent and distinctive feature in American literature, and each new one deserves a welcome as a sign that the love for out-door life, as it means not sport, but a keen, intelligent pleasure in the beauty and significance of natural objects, is steadily on the increase among our countrymen. Perhaps certain recent volumes by other hands have been more poetical, more full of the personality of the writer than Mr. Torrey's. Nevertheless there is individuality and a touch of poetic feeling in his pages, too; and he has occasionally an epigrammatic way of putting a valuable truth which should impress it with peculiar distinctness upon the mind of the reader. When, for example, he says that he has almost written "highwayman" instead of "highway surveyor," we feel a sympathetic thrill inspired by the memory of such ravages among beautiful road-side growths as he himself is deploring.

Birds, even more than plants, have been the objects of Mr. Torrey's studies, and his chapters are pretty equally divided between the attractions of animate and of inanimate nature, thus giving his book more variety than is found in some others of its character. Few pages are pleasanter than those which, under the title of "Bashful Drummers," describe his long-thwarted efforts to see as well as hear the partridge drumming—none, unless it be those which recount his "Woodland Intimacy" with a vireo. Another very charming and more definitely instructive essay was noticed in these columns when first printed some months ago in the *Atlantic Monthly*—the one which recites the surprising number of plants which may be found blooming in November on a New England sea coast. In "Esoteric Peripateticism" we have a delightful plea for those contemplative rambles, which are too often considered a mere waste of time in this busy land. As Mr. Torrey well says, every impulse toward such a manner of spending one's hours should be sedulously encouraged because "there is little danger that the lives of any of us will be too solitary or lived at too leisurely a rate. The world grows busier and busier. Those whose passion for Nature is strongest and most deep-seated are driven to withhold from her all but the odds and ends of the day. We rebel sometimes; the yoke grows unendurable; come what may, we will be quit of it; but the existing order of things proves too strong for us, and anon we settle back into the old bondage." Mr. Torrey's "ideal plan" would include two walks a day—"one in the morning for observation, with every sense alert; the other toward night, for a mood of 'wise passiveness' wherein Nature should be left free to have her own way with the heart and the imagination." He well emphasizes the fact that really and fully to enjoy hours out-of-doors some branch of science should be studied, that the senses may be alert to good purpose and the intellect as well as the faculty of mere passive enjoyment be gratified. Of course, as he admits, there is some danger in scientific study—the danger that the receptive, emotional, beauty-loving faculties may be blunted and the mind alone be used. "One may become so zealous a botanist as almost to cease to be a man. The shifting panorama of the heavens and the earth no longer appeals to him. He is now a specialist, and, go where he will, he sees nothing but specimens." But this danger can be avoided. It is possible to "give free play to fancy and imagination without permitting ourselves to degenerate into impotent dreamers. Every walker ought to be a faithful student of at least one branch of natural history, not omitting Latin names and the very latest discoveries and theories. But, withal, let him make sure that his acquaintance with out-door life is sympathetic and not merely curious or scientific." Only by a combination or alternation of the two moods—the two attitudes—can the truest enjoyment be extracted from the natural world. And how the two may exist and develop together Mr. Torrey displays so well in his various chapters that his example should profit as well as entertain all those who are moved to make the best of that "Rambler's Lease" in the real estate of others to which they as well as he have a right.

Recent Plant Portraits.

Botanical Magazine, December.

THRINAX EXCELSA, *t.* 7088; probably one of the so-called Thatch Palms of the West Indies, but described from a plant of uncertain origin long cultivated in the stove-house of the Royal Gardens.

TIGRIDIA PRINGLEI, *t.* 7089; first described and figured by Mr. Watson in GARDEN AND FOREST (i., 388, f. 61).

CABOMBA AQUATICA, *t.* 7090; an interesting aquatic plant ound in still waters from Mexico to southern Brazil; differing from the species (*C. Caroliniana*) of the southern United States by its much narrower leaves and yellow flowers (those of the North American species are white). The Cabombas are remarkable in the two forms of leaves produced on the same stem, the one form submerged and the other floating. The submerged leaves are round in outline, but are cut into narrow, thread-like divisions, while the floating leaves, with much longer petioles, are round and peltate. The small flowers are attractive, although they remain open during a single day only.

AMORPHOPHALLUS EICHLERI, *t.* 7091; a showy species from an island in the Congo River. The flowers, like those of the other species, emit a horrible odor.

CLINTONIA ANDREWSIANA, *t.* 7092; a native of the California coast-region, with showy, rose colored flowers in a dense terminal umbel.

MASDEVALLIA CHIMÆRA, *Gartenflora*, December 1st.

SALVIA SPLENDENS, var. Bruanti, *Gardeners' Chronicle*, December 7th. A variety with tall spikes of bright scarlet flowers and good habit.

SALVIA BETHELLI, *Gardeners' Chronicle*, December 7th. A form of *S. involucrata*, with very large spikes of puce-colored flowers.

Notes.

In all our eastern cities Carnations are scarce and high, owing to the unusually wet summer.

The growers who have succeeded in obtaining a very late crop of Chrysanthemums have been reaping a rich harvest. The variety named Christmas Eve has been an especial favorite in Boston.

The demand for Violets for the holiday trade has been urgent, both in Boston and New York, in spite of the high prices, caused by a limited supply, while in Philadelphia single Violets have never been so abundant. There is little call for white Violets.

Philadelphia florists are growing *Cypripedium Lawrenceanum* quite extensively, as its bold flowers, on long stems, are always salable, and generally one-third higher than those of *C. insigne*. Of the latter kind some 2,500 flowers were ready for market in Philadelphia on Monday.

Mistletoe has become very popular, and has been sold in great quantities this year in northern cities. The supply comes from the south, where collectors have learned to pack it properly, so that it reaches our markets in excellent condition. A few years ago a considerable quantity was sent here from England, but it was packed so carelessly that it was almost useless for any decorative purpose.

For the Christmas trade in Boston, Roses of various shades of pink and red have been in greatest demand. In Philadelphia a rather deep pink Hybrid Perpetual Rose has proved something of a sensation. It was at first considered a sport, but experts have identified it as Mademoiselle Marie Cointet. It is a globular flower, though not of such good form as either Mrs. Laing or Madame Gabriel Luizet, and it is rather darker than either. Its chief value is its earliness, as it will bloom a week or ten days before either of the above popular varieties.

The December number of the *Botanical Magazine* completes the 115th annual volume. It is dedicated by the editor, Sir Joseph Hooker, to Isaac Bayley Balfour, Professor of Botany in the University of Edinburgh, "the greatest and most influential botanical chair in the Queen's dominions," and the author of important books on the botany of Rodriguez and of Socotra. Seventeen years ago the same editor dedicated the ninety-eighth volume to Professor Balfour's father, then the distinguished occupant of the Edinburgh professorship.

A new industry seems to have been started in the Bermudas, where the culture of *Lilium Harrisi* has been made such a success. Early this fall there came to this market the first supply of dry rhizomes of Calla Lilies in sizes fit for forcing. Some of these are now in flower, having been potted about sixty days, but they would probably have bloomed in less time had careful attention been given to them. As these rhizomes can probably be produced very cheaply, no doubt the industry will increase, for there will be a large market for roots ready to throw bloom promptly, at a moderate price.

The new vegetable, *Stachys affinis*, has become quite popular in France, and is found now in all the principal fruit shops in Paris, the price varying from twelve to twenty-five cents a pound. At Amiens, one of the principal centres of production, it has been sold for fifteen francs a hundred pounds. Some one in that city conceived the happy idea of making a preserve of the tubers. Prepared in this way they lose nothing of their quality, and the question of keeping them is settled—a question of considerable importance, as the tubers in their natural state cannot bear exposure to the air for many days without decaying.

The sudden death on Tuesday, December 3d, of Dr. W. R. McNab is announced. Dr. McNab, the son and grandson of the distinguished curators of the Royal Botanic Garden at Edinburgh, was at the time of his death Professor of Botany at the Royal College of Science, Dublin, and the director at the Botanic Garden at Glasnevin. He was distinguished by his investigations in physiological botany and the minute anatomy of plants, both recent and fossil. Dr. McNab is, perhaps, best known by his researches into the minute anatomy of the leaves of conifers. He has for many years been an active and successful teacher.

The last issue of *Forest Leaves*, that for December, contains an interesting portrait of a specimen of the Bald Cypress from a photograph by Professor Rothrock. This specimen, which is growing on the borders of the James River, is a fair representative of the tree as it is seen sometimes standing alone in the water. It retains its wide-spreading branches, which spring from the trunk at nearly right angles and which give to the top the flat appearance which characterizes the species. The trunk in the particular specimen selected for this illustration is surrounded by an unusual number of the peculiar growths known as "knees," which are unusually well developed.

In a speech before the Forestry Commission of New Hampshire, at a meeting held at Manchester, Mr. Joseph B. Walker, chairman of the commission, stated that $2,500,000 were annually expended in New Hampshire by summer boarders. People more and more are coming to want country homes—and the charm of these country homes, he thought, lay in the forests that covered mountains, purified the air and beautified the landscape. He urged upon the people that if they denuded the mountains of their forests no one would want to come to New Hampshire, and the large revenue already received, and which was increasing from year to year, would be cut off. The *Southern Lumberman*, in commenting on this reason for forest-protection, shrewdly asks whether the same arguments could not be used for preserving the forests which help to make attractive the winter resorts of the south.

In view of the depression of the Orange market, President Fairbanks, of the Florida Fruit Exchange, publishes a statement of what he considers the material facts of the case. He first observes that while West India oranges mature in September and October and the Mediterranean and California oranges are not sweet until March, the fruit growers of Florida should have control of the market from the first of December until the first of March. Very few Florida oranges, however, attain much sweetness before the middle of December, but this year half a million boxes, probably more than one-fourth of the entire crop, of partly green and altogether sour fruit were thrown on the market in November. As a result of this excessive supply of green and acid fruit, which was a libel on the good name of Florida oranges, buyers became few and suspicious. The lesson to be learned from this recital is not far to seek.

A carefully illustrated bulletin, just issued by the Experiment Station of the Kansas Agricultural College, is devoted to the smut in Oats caused by the minute parasitic plant, *Ustilago Segetum*. The parasite is carried with the seed oats, and perhaps never by manure from smutted straw. The disease is more destructive than is generally believed, causing a loss this year of more than eleven per cent. of the crop on the college farm and a probable financial loss of more than a million dollars to the farmers of the state of Kansas every year. Various fungicides were tried, which lessened the amount of smut, but at the same time affected injuriously the germinating power of the seed and reduced the vigor of the plants. The chief interest of the bulletin, however, lies in the fact that a trial of the hot water treatment, first published in the *Gardeners' Chronicle* by Professor Jansen, of Copenhagen, showed that the smut could be entirely prevented by soaking the seed for fifteen minutes in water heated to a temperature of 132 degrees. A chapter on the natural enemies, both vegetable and animal, of the smut, contains much that is interesting, although of little practical importance, since the disease can be so easily controlled.

The endeavor to establish a botanic garden in the City of Montreal, three years ago, though it met with great opposition at the time, is likely to be realized at no distant day, though the original plan has been greatly modified. For some time past efforts have been directed toward the establishment of a garden in connection with McGill University, and the end has been so far attained that a portion of the grounds, embracing somewhat more than three acres, has been set apart for that purpose, the intention being to occupy eventually about six acres. During the past season a pond for aquatic plants has been constructed, and walks and beds have so far been laid out that planting will begin with the opening of spring. There are already in the grounds upward of one hundred native and exotic trees and shrubs, besides a fair collection of herbaceous plants. These will be added to from the native flora. There are also on hand several hundred specimens raised from seed received from the Imperial Botanic Gardens of St. Petersburg, and the Royal Gardens, Kew, all of which have been raised and cared for in private grounds and conservatories. Active efforts are being made for the construction of a conservatory, which it is hoped may be erected soon. It is the intention to adapt the garden to the purposes of collegiate work and the representation of the native flora, together with such exotic species as may be hardy and prove otherwise desirable.